Clean Set of Amended Claims

1. (Amended) A cochlear implant system, comprising:

a signal generator that generates a second signal capable of causing pseudospontaneous activity in an auditory nerve;

a signal processor that combines a first signal that represents sound and the second signal to output a combined signal; and

a stimulation unit coupled to the signal processor that receives the combined signal from the signal processor.

2. (Amended) The system according to claim 1, wherein the stimulation unit is an electrode array unit that is coupled to the auditory nerve.

4. (Amended) The system according to claim 1, wherein the second signal includes one of (i) a pulse train generating substantially continuous pseudospontaneous activity, (ii) a broad band noise, and (iii) at least fluctuations in amplitude greater than prescribed amount at a frequency above approximately 2k Hz that causes statistically independent activity in a plurality of nerve fibers of the nerve.

Sub E1 B2

5. (Amended) The system according to claim 1, wherein the pseudospontaneous activity is demonstrated by statistically independent activity in a plurality of nerve fibers in the auditory nerve.

Sub E1 B3

10. (Amended) The system according to claim 1, wherein a microphone, the signal processor and the signal generator are positioned external to an ear, wherein the stimulation unit is coupled by a wire to the signal processor, and wherein the stimulation unit is coupled to the auditory nerve via a cochlea.

Sub E1 B4

13. (Amended) The method according to claim 11, wherein the first signal represents at least one of speech, emergency signals and control information.

14. (Amended) The method according to claim 12, wherein an inner ear implant is capable of performing the steps of receiving through applying.

Sub E1 B5

16. (Amended) An auditory prosthesis for receiving an auditory signal representing sound and supplying an electrical signal which is adapted to stimulate the auditory nerve of a person, comprising:

pseudospontaneous generation means for generating a pseudospontaneous driving signal;

transducer means adapted to receive the auditory signal and the pseudospontaneous driving signal for transforming the auditory signal and the pseudospontaneous driving signal to an electrical input signals; and

stimulation means, operatively coupled to the electrical input signals generated by the transducer means, for stimulating the auditory nerve at defined locations within the cochlea, wherein at least one of the plurality of electrical signals is capable of causing statistically independent activity in a plurality of nerve fibers of an auditory nerve.

18. (Amended) The auditory prosthesis of claim 16, wherein the pseudospontaneous driving signal includes one of (i) a pulse train generating substantially continuous activation, (ii) a broad band noise, or (iii) at least fluctuations in amplitude greater than prescribed amount at a frequency above approximately 2k Hz.

B. Please add new claims 19-31 as follows:

19. (New) The method of claim 14, wherein the applying the combined signal generates substantially continuous pseudospontaneous activity.

20. (New) The method of claim 11, wherein the second signal is not continuously applied.

21. (New) The method of claim 11, wherein the second signal includes one of (i) a pulse train generating substantially continuous pseudospontaneous activity, (ii) a broad band noise, and (iii) at least fluctuations in amplitude greater than prescribed amount at a frequency above approximately 2k Hz that causes statistically independent activity in a plurality of nerve fibers of the nerve.

22. (New) A neural prosthetic apparatus, comprising:

a signal generator that generates a second signal capable of inducing a random pattern of activation in an auditory nerve;

a signal processor that combines a first signal that represents sound and the second signal to output a combined signal; and

stimulation unit coupled to the signal processor that receives the combined signal from the signal processor for application to the auditory nerve.

23. (New) The apparatus according to claim 22, wherein the stimulation unit is an electrode array unit that is coupled to the auditory nerve, and wherein the first signal is applied to a first subset of electrodes in the electrode array and the second signal is applied to a second subset of electrodes in the electrode array.

24. (New) The apparatus according to claim 22, wherein the random pattern of activation is demonstrated by statistically independent activity in a plurality of nerve fibers in the auditory nerve.

25. (New) The apparatus according to claim 22, wherein the auditory nerve comprises a plurality of nerve fibers, and wherein the second signal comprises one or more signals that generate a substantially maximum firing rate of the plurality of nerve fibers.

26. (New) The apparatus according to claim 22, wherein the second signal includes one of (i) a pulse train generating substantially continuous pseudospontaneous activity, (ii) a broad band noise, and (iii) at least fluctuations in amplitude greater than prescribed amount at a frequency above approximately 2k Hz that causes statistically independent activity in a plurality of nerve fibers of the nerve.

27. (New) The apparatus according to claim 22, wherein the prosthesis is a cochlear implant applying current to the auditory nerve.

28. (New) The apparatus according to claim 22, wherein the pseudospontaneous activity continues after the second signal is stopped.

29. (New) A method of modifying a neural prosthetic apparatus that receives an information signal and supplies a corresponding electrical signal to stimulate an auditory nerve, comprising:

providing a pseudospontaneous signal generator that generates a second signal; and

providing an electrical coupling means for supporting an electrical connection from the pseudospontaneous signal generator to at least one electrical contact, and wherein the second signal is capable of inducing a random pattern of activation in the auditory nerve mimicking the spontaneous neural activity of the auditory nerve.

30. (New) The method of claim 29, wherein the information signal represents at least one of speech, emergency signals and control information, and wherein the second signal includes one of (i) a pulse train generating substantially continuous pseudospontaneous activity, (ii) a broad band noise, (iii) at least fluctuations in amplitude greater than prescribed amount at

a frequency above approximately 2k Hz, and (iv) at least fluctuations in amplitude greater than prescribed amount at a frequency that causes statistically independent activity in a plurality of nerve fibers of the auditory nerve.

31. (New) The method of claim 29, wherein the neural prosthetic apparatus is a cochlear implant.